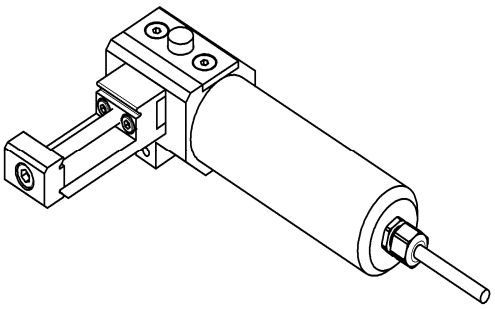

USER MANUAL

MONTRAC COMPONENTS

ShuttleLock

BA-100067

starting from serial number 421830

english, edition 05/2007

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1. Important information

1.1. Introduction

This operating instruction describes the mechanical design, the load limits, installation, maintenance and spare parts of the TracShuttleLock.

1.2. EU - conformance (to EU Directive on Machines, Appendix II A)

Regulations and standards taken into account:
A Montrac transport system is a machine that consists of, depending on the application, a variety of precisely defined components. The regulations and standards taken into account for the components are mentioned in the respective sub-chapter of the operating instructions

Montrac transport systems may only be put into operation,
a) when they are operated with a power supply that complies with the standards described in the operating instructions.
b) when the space beneath transfer gates and crossings is inaccessible in an area with a diameter of 1.6 m (Danger of crash for shuttles if transfer gate or crossing is incorrectly switched.)

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1.3. EMV-Guideline

Emission:
- EMC directives: Noise field intensity according to EN 55011 or EN 55022, Class A.

Immunity:
- To electromagnetic fields according to 801-3: 10 V/m, 1 kHz, 80% AM.
- To burst according to IEC 801-4: 2 kV.
- To line-carried, narrow-band noise according to IEC 801-6: 10 VEMF.
- To 50 Hz magnetic fields according to EN 61000-4-8: 30 A/m.
- To discharge of static electricity.
- To conducted noise.

1.4. Product description and application

Montrac is a monorail transport system with self-propelling shuttles, constructed to carry loads of up to 12 kg or 24 kg (2-axle shuttle) and pallet sizes up to 300 x 550 mm. Montrac is a modular system. Standardized basic components enable customer-specific system configurations to be set up for connection to machining stations, machines, order-picking stations, etc.

Montrac can be used wherever material has to be moved, distributed, processed stepwise (e.g. assembled) or collected together at one point from various senders.

1.5. System logistics

The ShuttleLock serves to localize the Shuttle at a SupoTrac or on the lift.

1.6. Safety instructions

The safety instructions, especially those concerning the electrical connection, must be heeded during commissioning, operation, repair work and decommissioning. Non-compliance with these instructions is an improper use of the transport system and its components.

The operation of a Montrac transport system in an explosive atmosphere (combustible gases, vapors or dust) may lead to their ignition and must therefore not be carried out.

1.7. Dangers

In order to exclude dangers under operating conditions, the requirements specified in the EU Declaration of Conformity with regard to a) the electrical supply and b) the safety equipment must be fulfilled.

1.8. Additional information

The aim of the present operating instructions is to enable users to employ ShuttleLock correctly and safely. Should further information be required relating to the particular application, do not hesitate to contact the manufacturer.
When ordering user manual it is essential to quote the type and serial number.
Additional operating instructions can be obtained from our homepage www.montratec.com.

1.9. Validity of the User Manual

Our products are continually updated to reflect the latest state of the art and practical experience. In line with product developments, our User Manuals are continually updated.

Every User Manual has an article number e.g. BA-100067.
The article number and the date of edition are evident on the title page.

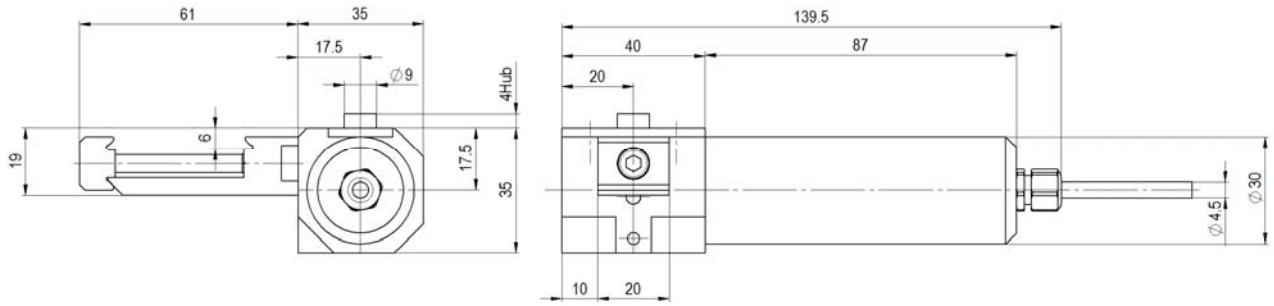
2. Technical Data

2.1. Technical Data

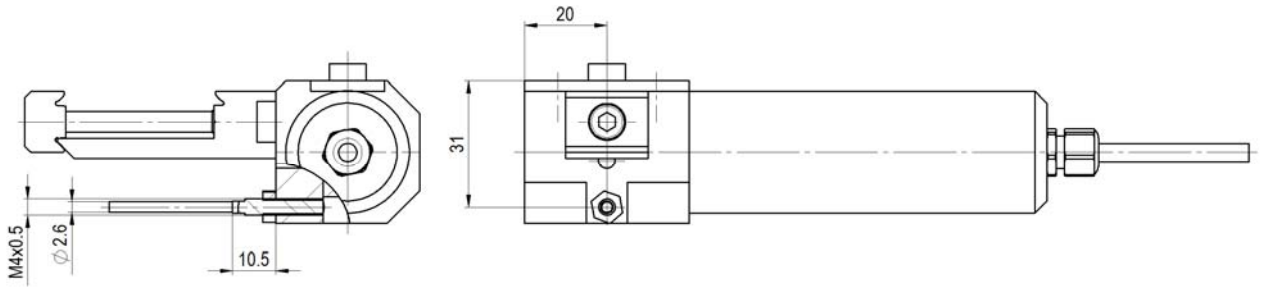
Weight		[kg]	0.560
Connected voltage		[V DC]	24
Current consumption		[A]	0.5
Ambient conditions:	Temperature	[°C]	10 – 40
	Rel. humidity		90% without condensation
	Air purity		Air purity Atmosphere for the assembly of precision mechanical products

2.2. Dimension sheet

2.2.1. ShuttleLock

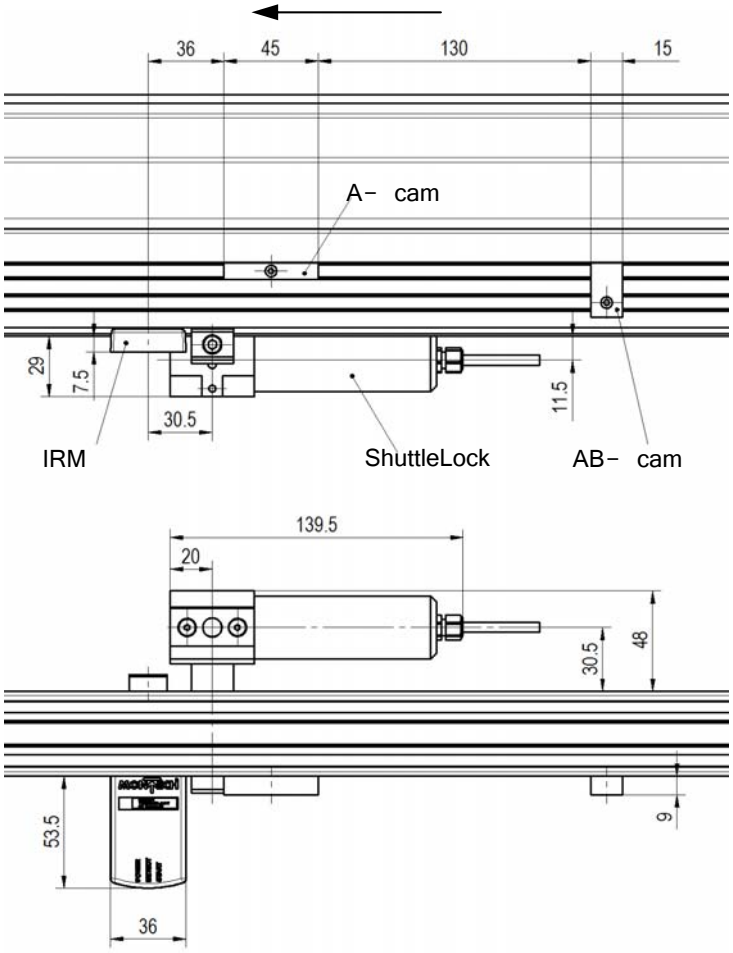


ShuttleLock with proximity switch



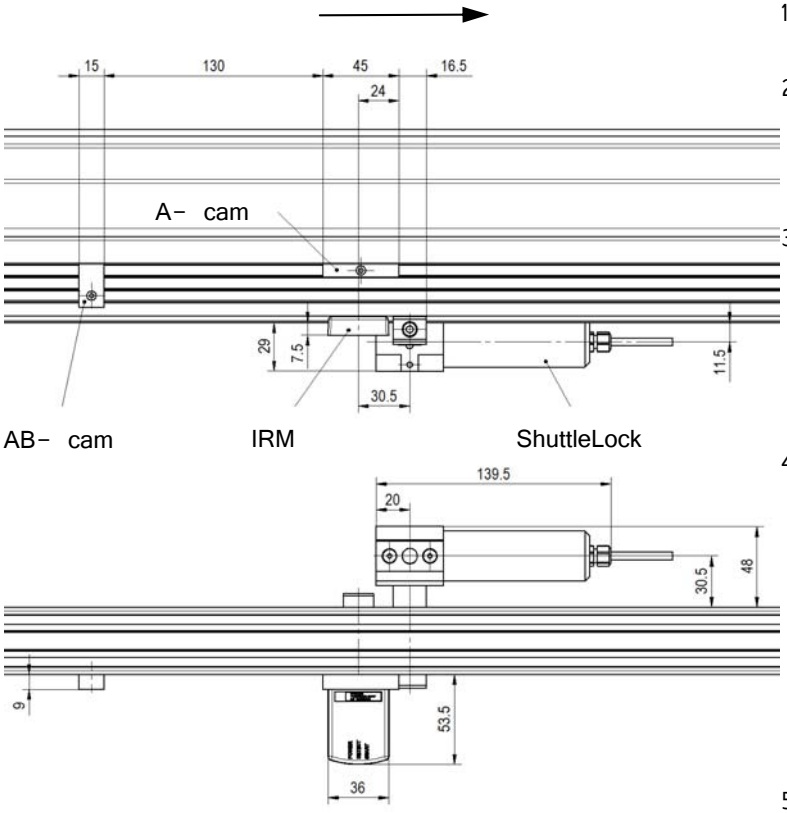
3. Installation and commissioning

Travel direction U



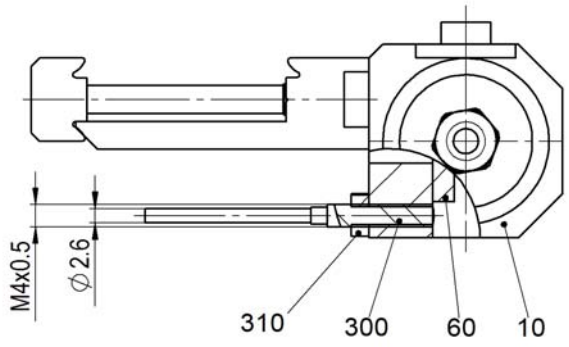
1. Secure the IRM at the desired stopping point.
2. Next, mount the A cam, the AB cam as well as the ShuttleLock as per the given distances.
3. Connect the IRM and the ShuttleLock to the power supply (refer to the IRM operating instructions for information on wiring and functional options).
4. To check the position of the ShuttleLock, allow a Shuttle to pass over the AB cam (its speed is lowered) and the A cam (Shuttle stops). If the IRM has been fitted in the correct position, the LED will illuminate yellow. The pin of the ShuttleLock will extend.
5. Now check whether the pin has extended centrally in the recess at the bottom of the Shuttle. If not, move the ShuttleLock into the correct position.

Travel direction GU



1. Secure the IRM at the desired stopping point.
2. Next, mount the A cam, the AB cam as well as the ShuttleLock as per the given distances.
3. Connect the IRM and the ShuttleLock to the power supply (refer to the IRM operating instructions for information on wiring and functional options).
4. To check the position of the ShuttleLock, allow a Shuttle to pass over the AB cam (its speed is lowered) and the A cam (Shuttle stops). If the IRM has been fitted in the correct position, the LED will illuminate yellow. The pin of the ShuttleLock will extend.
5. Now check whether the pin has extended centrally in the recess at the bottom of the Shuttle. If not, move the ShuttleLock into the correct position.

Proximity switch



1. Make the ShuttleLock currentless, then screw the proximity switch, position 300, into the holder, position 10, until it touches the pin, position 60.
2. Now screw back the proximity switch approx. one quarter of a turn and fix in position using the hexagonal nut, position 310.
3. The pin must not make contact with the proximity switch.
4. When the ShuttleLock is in a released state, the LED in the proximity switch will illuminate green. On locking, the LED will no longer remain illuminated.

4. Maintenance

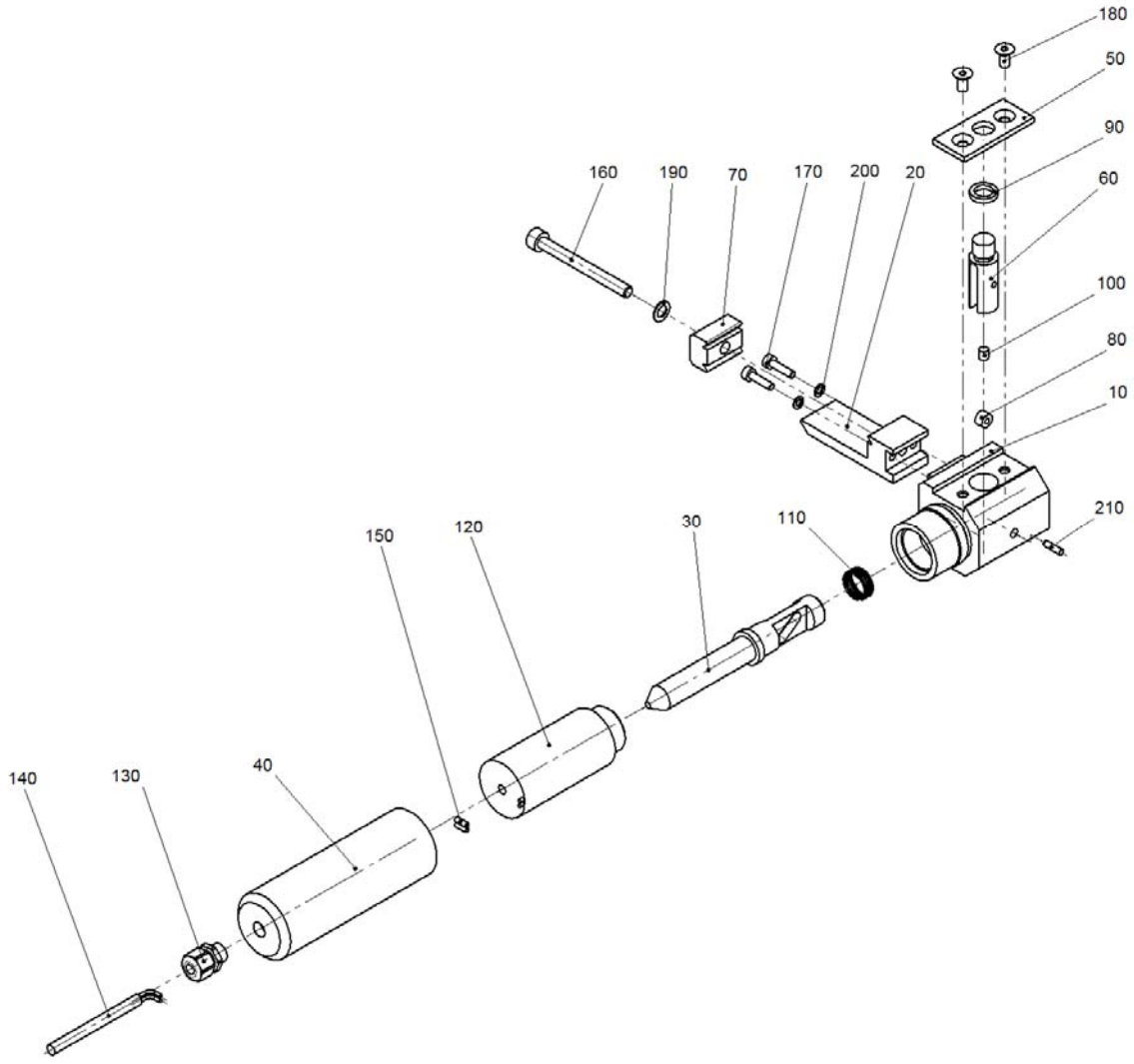
Every 6 months.

Operational check:
Check for the smooth running of the pin.

Proximity switch check:
The optional proximity switch in the ShuttleLock is to be checked for signs of damage (e.g. mechanical wear of the proximity switch cap as well as operation of the LED). Damaged proximity switches must be replaced.

5. Parts list

5.1. ShuttleLock

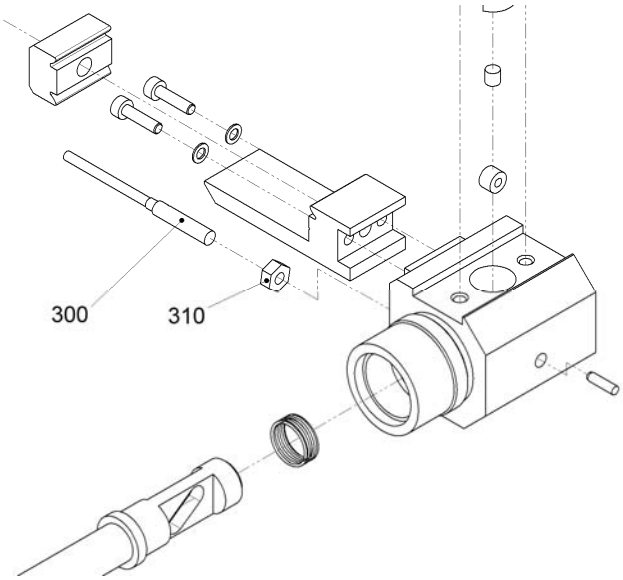


5.2. Parts list ShuttleLock

Item	Sym.	Designation	Art.-Nr.	Material
	◘	ShuttleLock	56925	Various
10	◊	Holder	56922	Aluminium
20	◊	Holder	56898	Aluminium
30	◊	Cylinder	56923	Steel
40	◊	Sleeve	57182	Aluminium
50	◊	Cover plate	57236	Aluminium
60	◊	Pin	56902	Steel
70	◊	Spanner	41188N	Aluminium
80	◊	Roll	43123	Steel
90	◊	Ring	57186	NBR
100	◊	Buffer	57185	NBR
110	◊	Pressure spring	56979	Steel
120	◊	Magnet26x52	520182	Steel / Copper
130	◊	Cable connection M8	505828	Brass
140	◊	Cable	505827	Plastics
150	◊	Sleeve	520291	Plastics
160	◊	Socket cap screw M 5x50	502517	Steel
170	◊	Socket cap screw M 3x12	502504	Steel
180	◊	Countersunk screws M4x8	505322	Steel
190	◊	Ribbed washer M5x9x0.6	505254	Steel
210	◊	Dowel pin ø 2.5x 10 h6	502014	Steel
200	◊	Ribbed washer M3x5.5x0.45 BN792	505385	Steel

◊ Not available ex stock individually (upon request)
◘ Price-listed items available ex stock

ShuttleLock with proximity switch



Item	Sym.	Designation	Art.-Nr.	Material
300	◘	Proximity switch PNP M4x0.5x22	520292	Steel
310	◊	Screw nut M4x0.5		Steel

◊ Not available ex stock individually (upon request)
◘ Price-listed items available ex stock

6. General information

6.1. Environmental compatibility and disposal

Materials used:
- Aluminium
- Copper
- Steel
- rubber （NBR）

Surface treatment:
- Anodization of aluminium
- Nickel-plating of brass and steel
- Galvanizing of steel

Shaping processes:
- Extrusion of aluminium
- Machining of aluminum, steel
- Water jet cutting of plastics

Emissions during operation
- See EMC emissions

Disposal:
ShuttleLock which cannot be used any more should be recycled not as complete units but after dismantling into individual parts, according to type of material. The type of material for each part is shown in the spare parts lists. Material which cannot be recycled should be appropriately disposed of.